

Work Order ID 65521

January 19, 2011 11:40:24 AM



Page 1

Item ID: D2580-1

Accept



Setup Start



Revision ID:

Stop



Item Name: 205 Skidtube bent detail

Start Date: 1/20/11 Start Qty: 2.00



Cust Item ID:


Required Date: 1/25/11 Req'd Qty: 2.00



Customer:

Reference:

Approvals:

Process Plan: 

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2580	RevD DEO-D1								

100

0.00



Skidtubes

Skidtubes

Memo

0.00

1- Inspect mat'l D2500-1-190 for damage.

2-Drill pilot holes using drill jig DT 8149 (Do not use cutting fluid)

3-Open holes to 0.500" as per Dwg D2580 without cutting fluid

4-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube

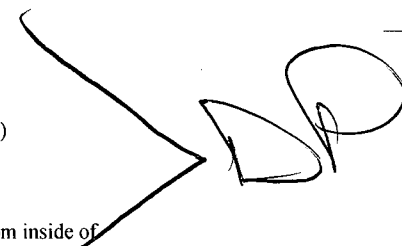
5- Chemical Conversion Coat as per QSI 005 4.1

6-Bond web in place per QSI 015.

A/R Sikaflex-291 batch: 16040

Sikaflex expire date: 11/9/30

Start time and date: 8:30 11/1/26 bond for 12hrs



11-1-25

11/1/25

11/1/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65521

January 19, 2011 11:40:25 AM



Page 2

Item ID: D2580-1

Accept



Setup Start



Revision ID:

Stop



Item Name: 205 Skidtube bent detail

Start Date: 1/20/11 Start Qty: 2.00



Cust Item ID:

Required Date: 1/25/11 Req'd Qty: 2.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
101 QC Quality Control	QC6- Inspect dimensions to drawing Memo	0.00 0.00				2	0	BE 1/02/03	
130 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				2	0	BE 1/02/03	
140 Packaging Packaging	Identify as per dwg & Stock Location: <u>LG</u> Memo	0.00 0.00				2	0	BE 1/02/03	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Work Order ID 65521

January 19, 2011 11:40:25 AM



Page 3

Item ID: D2580-1

Accept



Setup Start



Revision ID:

Stop



Item Name: 205 Skidtube bent detail

Start Date: 1/20/11 Start Qty: 2.00



Cust Item ID:

Required Date: 1/25/11 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/02/04 *[Signature]*

MF

11-02-03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

January 19, 2011 11:40:24 AM

Page 1

Work Order ID: 65521

Parent Item: D2580-1

Parent Item Name: 205 Skidtube bent detail

Start Date: 1/20/11

Required Date: 1/25/11

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP B01.11.08 Revised Step 9, 10, 12, and 13 SM 10.12.01 as per DEO D1 DD verf:ec IPP Rev:C

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2500-1-190

Manufactured

No

100

Each

82.0000

1

2



Ext'n - 'I' Beam Tube 4"

Location

Loc Qty

Loc Code

LG

82

52319

11

58427

71

② DP 11-1-25

D2596

Manufactured

No

100

Each

12.0000

1

2



Web, 205 Skidtube

Location

Loc Qty

Loc Code

LG

10

64875

10

LG46

2

64678

2

2 BB 11/01/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

RELEASED
07.06.28 *[Signature]***DEO ATTACHED**

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

*W/D 65521***GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

RELEASED
07-06-28

DEO ATTACHED

Technical drawing of a circular component with a central hole and a rectangular slot. The drawing includes dimension lines and labels for various parts and materials.

Labels and dimensions:

- DRILL PRIOR TO D2855 CAP INSTALLATION (2 PLACES)
- SEAL WITH SIKAFLEX-241/-291
- AN3-5A BOLT (1)
- AN960JDIOL WASHER (1) (2 PLACES)
- D2855 CAP
- 0.208
- 0.40

D2579 SPACER

D2596 WEB (REF)

AL57-1032-130 (REF)
(TYP 50 PLACES)

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

37.50
DISTANCE TO AFT END
OF D2596 WEB
3 7
REFER TO DETAIL A
1.750 1.750
8.750
17.375
26.000
34.188
57.313 (REF)
7 EQUAL SPACES
8.188 PITCH
38.0 91.50
190.0
(D2500-1)
#0.508 (TYP.)
(40 PLACES)
REFER TO DETAIL A

Figure 1 is an elevation view of the bridge deck. It shows a horizontal line representing the deck surface. On the left, there is a vertical curve with a radius of 20.0'. The height of the curve is 1.1'. A hole is located on the deck, with a diameter of 1.4. The distance between the hole and the tangent point is 1.0. The distance between the hole and the tangent point is also 1.0. The distance between the hole and the tangent point is 32.0 ± 1.0. The diagram includes labels for the hole diameter (1.4), the distance between the hole and the tangent point (1.0), the distance between the hole and the tangent point (1.0), and the distance between the hole and the tangent point (32.0 ± 1.0). It also shows a vertical curve with a 20.0' radius and a 1.1' height.

D3566-011 ASSEMBLY DETAIL

WELD AS PER DETAIL B

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

0.5 1.5 1.5 0 1.5 1.5 1.5






REFER TO DETAIL C

D3566-1 D3566-5 D3566-13

D3564-11 D3564-5 D3564-9 D3564-13

AN304A BOLT (1)
AN960C10L WASHER (1)
(50 PLACES)

DESIGN DRAWN BY CHECKED BY

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	CHECKED 	APPROVED 	DRAWING NO. D2580	SHEET 2 OF 3	
	DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY		SCALE 1:24	

1665524

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

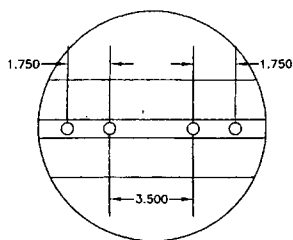
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

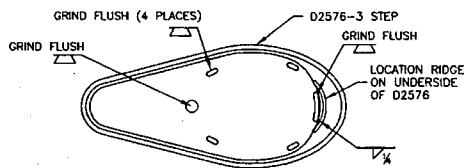
NOTE: Date & initial all entries

DETAIL E
SCALE 5:24



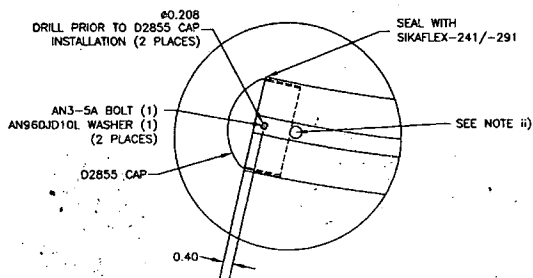
RELEASED
07.06.28

DETAIL F
SCALE 5:24

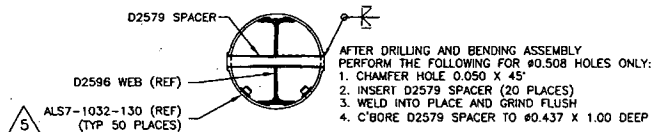


DEO ATTACHED

DETAIL G
SCALE 5:24



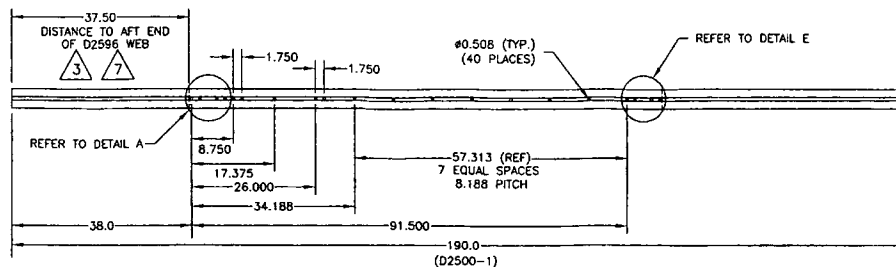
SECTION H-H
SCALE 5:24



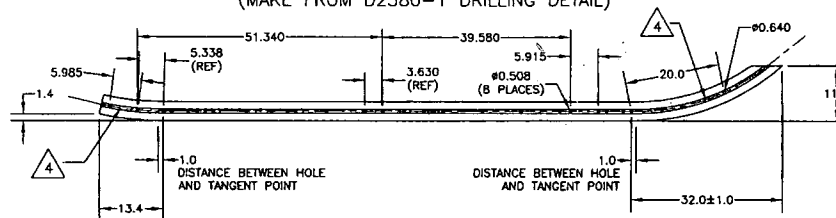
D2580-045 NOTES

- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

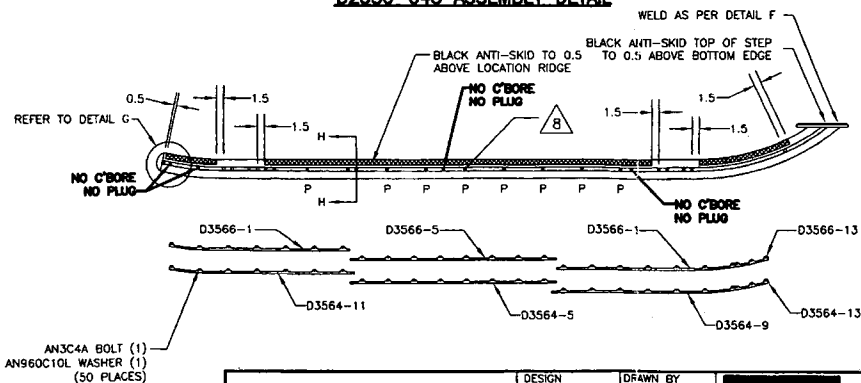
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



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DESIGN <i>RH</i>	DRAWN BY <i>RH</i>	DART DART AEROSPACE LTD. MARKESBURY, ONTARIO, CANADA	REV. D
CHECKED <i>TH</i>	APPROVED <i>TH</i>	DRAWING NO. D2580	SHEET 3 OF 3
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	

6524

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>L</i>	MFG. APPR. <i>RE</i>	APPROVED <i>MP</i>		DE APPR. <i>MP</i>		
DATE 10.09.22	DATE 10.11.04	DATE 10.11.04	DATE 10/11/04		DATE 10.11.04		

PURPOSE:

CHANGE ALL WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

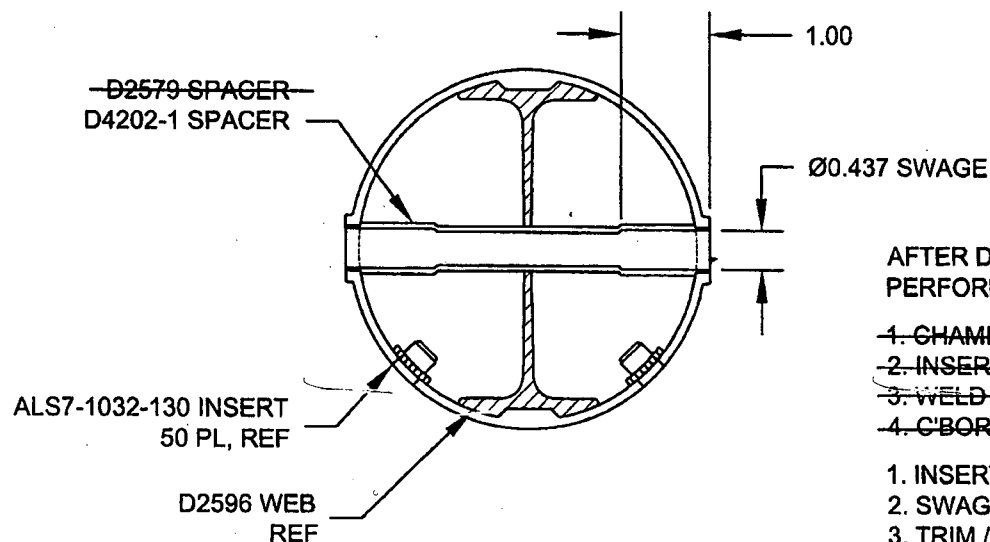
WAS

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045		
20	24	D2579	CROSS BOLT SPACER

IS

20	24	D4202-1	SPACER
----	----	---------	--------

SECTION D-D & SECTION H-H ARE AMENDED AS FOLLOWS:



SECTION D-D
NOT TO SCALE

SECTION H-H
NOT TO SCALE

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C-BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 24 PL (-045)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

RELEASED
2010-11-18
MP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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